

THE SOUTH AMERICAN SAWFLY GENUS *ACIDIOPHORA* KONOW
(HYMENOPTERA: TENTHREDINIDAE)

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ABSTRACT—The genus *Acidiophora* Konow is known only from South America. The genus is redescribed and a key and descriptions are given for the six known species: *A. decora* Konow (= *A. nebulosa* Jörgensen, n. syn.) from Argentina and Brazil; *A. bokama*, n. sp. from Brazil; *A. konowi*, n. sp. from Peru; *A. manni*, n. sp. from Bolivia; *A. gecera*, n. sp. from Brazil; and *A. larira*, n. sp. from Brazil.

The genus *Acidiophora* Konow is restricted to South America, and its members are easily recognized by their long, fasciate wings with a contrasting black and hyaline pattern and their shining, impunctate black and red bodies. So remarkable are their other characters such as the narrow elongated stigma of the forewing, trifid tarsal claws, and reduced apical five antennal segments, that Benson (1938) established a new tribe, the Acidiophorini (misspelled Acideophorini), in the Allantinae solely for this genus.

Only two species have been described, *A. decora* Konow in 1899 from Rio Grande do Sul, Brazil and *A. nebulosa* Jörgensen in 1913 from Misiones, Argentina. My examination of the types of both species showed them to be identical. I have found an additional five species, three from Brazil and one each from Peru and Bolivia. Hosts are not known, but, judging from the fragile, nearly membranous lancets, the eggs must be deposited in very soft-tissued plants.

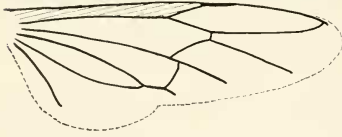
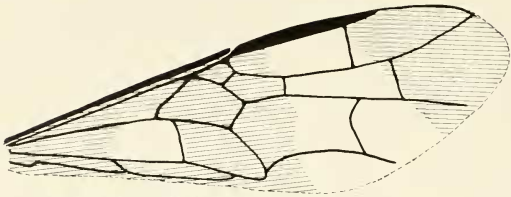
The cooperation of the following has made this review of *Acidiophora* possible: Dr. J. Oehlke, Institut für Pflanzenschutzforschung, Eberswalde, Germany and Ing. Agr. Dr. Luis de Santis, Facultad de Ciencias Naturales y Museo, Universidad Nacional de La Plata, Argentina.

***Acidiophora* Konow**

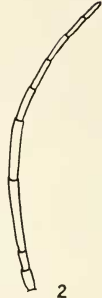
Acidiophora Konow, 1899, p. 361; Konow, 1905, p. 100; Benson, 1938, p. 366 (*Acideophora*). Type-species: *Acidiophora decora* Konow. Monotypic.

Description.—Antenna long, slender, first and second segments each longer than broad, third segment subequal in length to fourth segment, apical five segments reduced, together subequal in length to third and fourth segments combined (fig. 2). Clypeus truncate to slightly rounded; malar space linear; no genal carina; each mandible tridentate with inner tooth small; eyes large, distance between eyes at base less than length of an eye; postocellar area as long as broad; head smooth and shining, practically devoid of ridges. No prepectus; cenchri closer

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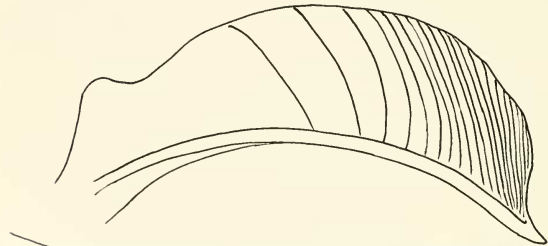
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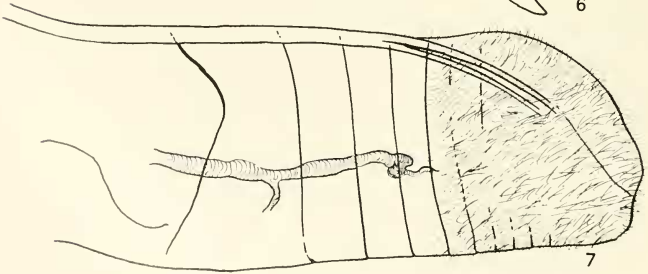
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together than breadth of a cenchrus; mesepimeron with oval membranous area. All tarsal claws trifold, without basal lobe (fig. 3); hindbasitarsus longer than remaining tarsal segments combined. Forewing (fig. 1) with anal crossvein oblique; stigma long and narrow, more than half length of radial cell; radial crossvein straight, nearly perpendicular to stigma. Hindwing (fig. 1) without cell M; anal cell sessile or with short petiole; apex of radial cell close to apical margin of wing, with short spurious vein. Male without peripheral vein in hindwing.

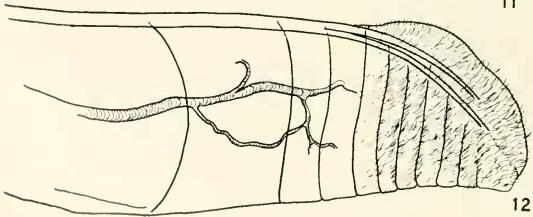
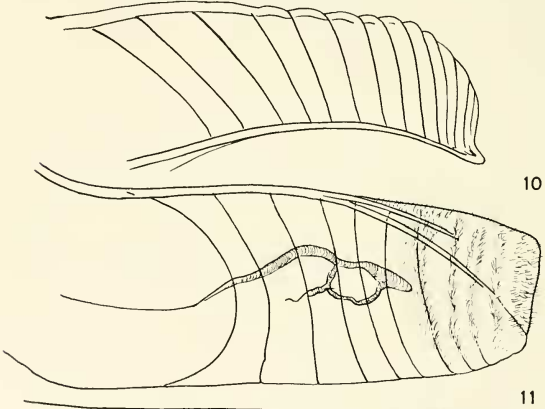
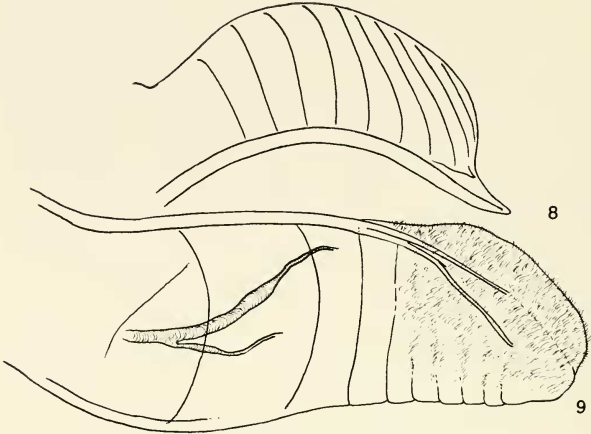
Discussion.—Four genera of Allantinae are found in South America: *Acidiophora*, *Antholcus* Konow, *Probleta* Konow, and *Protoprobleta* Malaise. *Acidiophora* is separated from all of these by the trifid tarsal claws, elongate stigma and straight radial crossvein of the forewing, truncate to rounded clypeus, and reduced apical five antennal segments (other genera may have the apical four segments reduced).

The species of *Acidiophora* are all similar in general appearance, but can be separated by color of the thorax and genital characters. These characters given in the generic description are not repeated for each species. The female lance and lancet are distinctive for the genus. The lance is short and acute at the apex and the lancet is short and broad with the basal portion lightly sclerotized and black, and the apical portion membranous and white.

KEY TO SPECIES

1. Thorax, front coxae and femora entirely orange *A. konowi*, n. sp.
 Thorax and front legs mostly black, or at least with black on pectus and mesoprescutum 2
2. Mesopleuron entirely black; mesonotum entirely or mostly black, at most with lateral half of each lateral lobe orange 3
 At least upper quarter of mesopleuron orange; mesonotum mostly orange 5
3. Forewing basal to stigma uniformly infuscated; pronotum black and mesonotum black *A. bokama*, n. sp.
 Forewing basal to stigma infuscated, but with a central hyaline spot; at least lower half of pronotum and usually lateral half of each lateral lobe orange 4
4. Anal cell of hindwing with short petiole; mesonotum mostly black; pronotum, except for lower half, black *A. larira*, n. sp.
 Anal cell of hindwing sessile; lateral half of each lateral lobe of mesonotum orange, the black on the mesonotum appearing as a broad, longitudinal stripe; pronotum orange *A. decora* Konow
5. Upper half of mesopleuron and all of mesoscutellum orange; anal cell of hindwing sessile *A. manni*, n. sp.
 Only upper corner of mesopleuron orange; mesoscutellum black; anal cell of hindwing with short petiole *A. gecera*, n. sp.

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 Figs. 1-3, 5. *Acidiophora gecera*, n. sp.: 1, fore- and hindwings; 2, antenna; 3, tarsal claw; 5, sheath. Figs. 4, 6, 7. *A. bokama*, n. sp. 4, sheath; 6, lance; 7, lancet.



***Acidiophora bokama*, n. sp.**

Female.—Average length, 9.7 mm; average forewing length, 11.8 mm. Antenna and head black. Thorax black with tegula, extreme basal portion of veins of forewing, upper portion of mesepimeron, upper portion of metapleuron at base of hindwing, and narrow line on anterior margin of pronotum red; posterior angles of pronotum sometimes brownish. Legs and abdomen black. Forewing uniformly infuscated from base to stigma, hyaline band below stigma, and apex beyond stigma infuscated; hindwing infuscated only on margin.

Anal cell of hindwing sessile. Sheath short, broad, truncated (fig. 4). Lance with basal four annuli far apart, annuli beyond fourth close together (fig. 6); lancet with apex rounded, slightly truncated on ventroapical margin, first annulus sinuate and remaining annuli parallel (fig. 7).

Male.—Length, 9.0 mm; forewing length, 9.9 mm. Color and structure similar to female. Harpe and parapenis as in fig. 15; apex of penis valve broad, with one dorsal projection (fig. 16); valve shorter and broader than that of *larira* (fig. 18).

Holotype.—Female, labeled "Brasilien, Nova Teutonia, 27° 11' B., 52° 23' L., 300–500 m., XI-17-1964, Fritz Plaumann." U.S.N.M. type no. 72058.

Paratypes.—Same locality as for holotype with following dates: 20-III-1948 (1♀); IX-1968 (1♂); II-1969 (1♀); XII-1970 (2♀♀).

Discussion.—This is the only species that lacks a hyaline spot in the basal infuscated portion of the forewing. This, in combination with the black mesopleuron, mesonotum, and pronotum, should distinguish this species.

The species name is an arbitrary combination of letters and should be treated as a noun.

***Acidiophora decora* Konow**

Acidiophora decora Konow, 1899, p. 361. ♂.

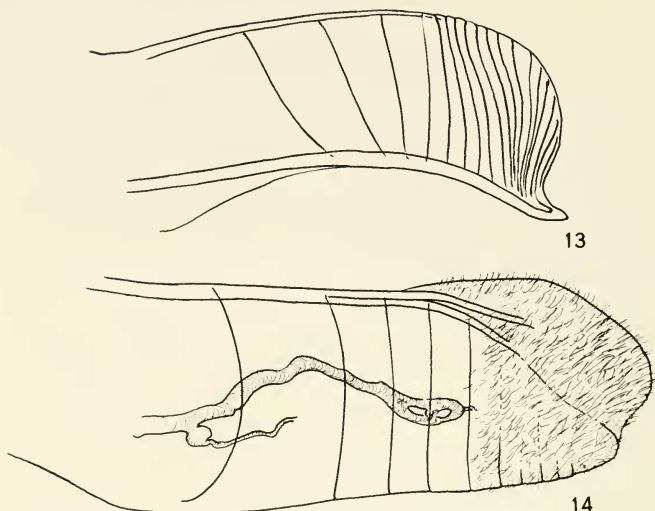
Acidiophora nebulosa Jörgensen, 1913, p. 276. ♂. NEW SYNONYMY.

Female.—Average length, 9.4 mm; average forewing length, 10.7 mm. Antenna and head black. Thorax black with cervical sclerites, except for anterior margin, pronotum, tegula, upper portions of mesepimeron and metapleuron, and lateral half of each lateral lobe of mesonotum red. Legs black, sometimes base of front coxa and outer surface of front femur whitish. Abdomen black. Forewing from base to stigma infuscated, with central hyaline spot; band below stigma hyaline; apex beyond stigma infuscated; hindwing infuscated only on apical margin.

Anal cell of hindwing sessile. Sheath short, broad, truncated, as in fig. 4. Lance with fewer annuli and annuli farther apart than in *bokama* (figs. 8, 6); apex of lancet rounded, first and second annuli sinuate, parallel, far apart, annuli beyond second parallel (fig. 9).

Male.—Average length, 8.2 mm; average forewing length, 8.8 mm. Color and

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Figs. 8, 9. *Acidiophora decora* Konow: 8, lance; 9, lancet. Figs. 10, 11. *A. gecera*, n. sp.: 10, lance; 11, lancet. Fig. 12. *A. manni*, n. sp.: lancet.



Figs. 13, 14. *Acidiophora konowi*, n. sp.: 13, lance; 14, lancet.

structure as for female except for front tibia and femur which are sometimes more whitish. Harpe and parapenis as in fig. 15, similar to that of *bokama*; penis valve broad, with two dorsal projections (fig. 17).

Types.—Konow's type is at the Institut für Pflanzenschutzforschung, Eberswalde, Germany, a male labeled "R. Grande do Sul," "Coll. Konow," "Typus," [red label], and the name label "*Acidiophora decora* Konow, Brasil" in Konow's handwriting. Jörgensen's type is at the Facultad de Ciencias Naturales y Museo, Universidad Nacional de La Plata, Argentina, a male labeled "25-IX-10, Misiones, Bompland, Jörgensen," and with a name label in Jörgensen's handwriting "*Acidiophora nebulosa*, n. sp."; the left forewing is missing.

Records.—ARGENTINA: Misiones, Bompland, 25-IX-10. BRAZIL: Rio Grande do Sul; Espirito Santo, X-1920–II-1921; Guanabara, Rio de Janeiro, XI-1963, M. Alvarenaga, coll.; Santa Catarina, Nova Teutonia, X-1969, X-1967, IX-1969, F. Plaumann.

Discussion.—This species is recognized by the entirely black mesopleuron, the broad black longitudinal stripe on the mesonotum, the red pronotum, the hyaline spot in the basal infuscated portion of the forewing, the sessile anal cell of the hindwing, and characters of the

genitalia as illustrated. The single female from Guanabara, Brazil, has the tegula black; otherwise, this specimen fits this species.

***Acidiophora gecera*, n. sp.**

Female.—Average length, 8.5 mm; average forewing length, 10.7 mm. Antenna and head black. Thorax black with cervical sclerites, upper corner or not more than upper one-third of mesopleuron, upper half of metapleuron, pronotum, tegula, lateral margins of mesoprescutum, and lateral lobes of mesonotum, except for posterior margins, red. Legs black with front coxa, front femur, and extreme base of front tibia whitish or orange, these parts mostly black in some specimens. Abdomen black. Forewing infuscated from base to stigma, with central hyaline spot; band below stigma hyaline; apex beyond stigma infuscated; hindwing infuscated only on margin.

Anal cell of hindwing petiolate with petiole length equal to about half width of cell. Sheath short, rounded (fig. 5). Lance with dorsal margin slightly crenulate; distance between annuli gradually decreasing toward apex (fig. 10); lancet with apex truncate, each annulus about the same distance apart, and annuli three and four slightly divergent (fig. 11).

Male.—Average length, 8.0 mm; average forewing length, 8.9 mm. Color and structure similar to female. Harpe and parapenis as in fig. 19; penis valve narrow, curved at apex (fig. 20).

Holotype.—Female, labeled "Brasilien, Nova Teutonia, 27° 11' B., 52° 23' L., 300–500 m., 16-III-1966, Fritz Plaumann." U.S.N.M. type no. 72059.

Paratypes.—All from the type locality with the following dates: 22-III-1947 (1 ♀); 14-III-1966 (2 ♀ ♀, 5 ♂ ♂); 13-IV-1966 (1 ♀, 2 ♂ ♂); III-1968 (2 ♂ ♂); IV-1968 (1 ♀); II-1969 (1 ♂); III-1969 (6 ♀ ♀, 26 ♂ ♂); III-1971 (2 ♀ ♀). At the U. S. National Museum.

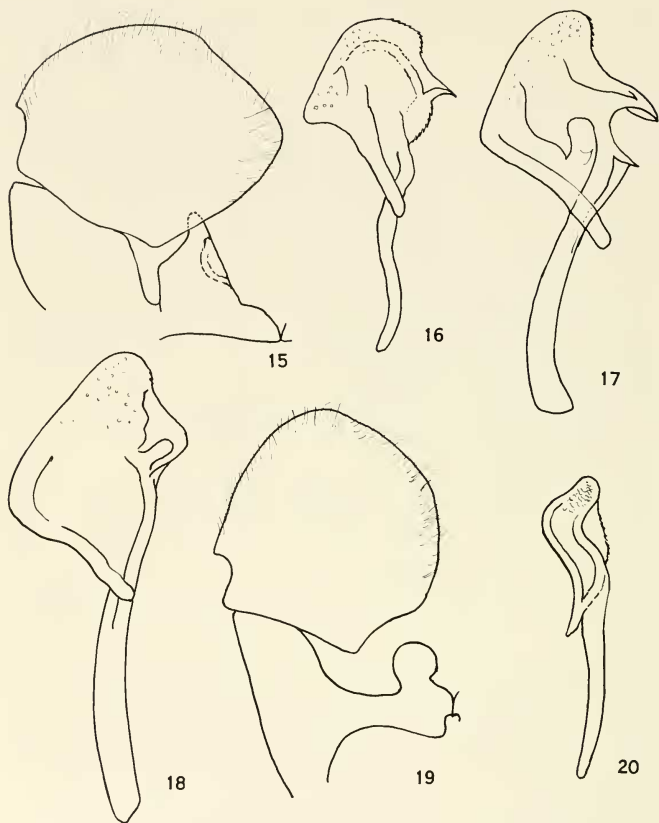
Discussion.—This species and *larira* are the only ones with a petiolate anal cell in the hindwing; however, *larira* has the mesopleuron and mesonotum black. Other diagnostic characters are the red mesonotum with the prescutum and scutellum black, red upper portion of the mesopleuron, truncated apex of the female lancet, and slender penis valve of the male genitalia.

The species name is an arbitrary combination of letters and is to be treated as a noun.

***Acidiophora konowi*, n. sp.**

Female.—Length, 7.2 mm; forewing length, 10.7 mm. Antenna and head black. Thorax entirely orange. Legs black with front coxa and front femur orange. Abdomen black. Forewing infuscated from base to stigma with central hyaline spot; hyaline band below stigma; apex beyond stigma infuscated; hindwing infuscated only on margin.

Anal cell of hindwing sessile. Sheath short, broad, truncated at apex (as in fig. 4). Lance with basal four annuli far apart, remaining annuli much closer together



Figs. 15, 16. *Acidiophora bokama*, n. sp.: 15, harpe and parapenis; 16, penis valve. Fig. 17. *A. decora* Konow: penis valve. Fig. 18. *A. larira*, n. sp.: penis valve. Figs. 19, 20. *A. gecera*, n. sp.: 19, harpe and parapenis; 20, penis valve. (Figs. 15-20 drawn to same scale.)

(fig. 13); lancet with dorsoapical margin protuberant, first and second annuli far apart, second and remaining annuli parallel (fig. 14).

Male.—Unknown.

Holotype.—Female, labeled "Vilcanota, Peru," "Coll. Konow." At the Institut für Pflanzenschutzforschung, Eberswalde, Germany.

Discussion.—This distinctive species is separated by the entirely orange thorax, front coxae, and front femora. The apical membranous portion of the lancet is also more protuberant than in other species of *Acidiophora*. It is named for the German sawfly worker Friedrich Wilhelm Konow, 1842–1908.

***Acidiophora larira*, n. sp.**

Female.—Unknown.

Male.—Length, 9.4 mm; forewing length, 10.6 mm. Antenna and head black. Thorax black with extreme posterior corner of cervical sclerites, lower half of pronotum, tegula, small spot on lateral side of each lateral lobe of mesonotum, upper margin of mesepimeron, and upper portion of metapleuron orange. Legs and abdomen black. Forewing infuscated from base to stigma with central hyaline area; hyaline band below stigma; apex beyond stigma infuscated; hindwing infuscated only on apical margin.

Anal cell of hindwing petiolate, with petiole length about half width of cell. Harpe and parapenis similar to *bokama* (fig. 15); penis valve broad, but longer and narrower than *bokama*, and with single dorsal lobe which is shorter than that of *bokama* (fig. 18).

Holotype.—Male, labeled “Rio de Janeiro, Dist. Federal, Brasil,” “Setembro, 1938,” “Servico Febro, Amarela, M.E.S., Bras.,” “R. C. Shannon, coll.” U.S.N.M. type no. 72060.

Discussion.—The color of this species is very similar to the color of *bokama*, but the presence of a hyaline spot in the basal infuscated portion of the forewing, petiolate anal cell of the hindwing, and the differences in the structure of the penis valve, as illustrated, will separate *larira*.

The species name is an arbitrary combination of letters and should be treated as a noun.

***Acidiophora manni*, n. sp.**

Female.—Length, 7.2 mm; forewing length, 8.8 mm. Antenna and head black; labrum brownish. Thorax orange with pectus, lower half of mesopleuron, and triangular spot on mesoprescutum black. Legs black with base of front coxa and front femur entirely orange. Abdomen black. Forewing infuscated from base to stigma with central hyaline spot; hyaline band below stigma; apex beyond stigma infuscated; hindwing infuscated only on margin.

Anal cell of hindwing sessile. Sheath short, broad, slightly emarginated on truncated apex (similar to fig. 4). Lance lost; lancet with apex rounded, first and second annuli far apart, annulus 2 and remaining annuli closer together and parallel (fig. 12).

Male.—Unknown.

Holotype.—Female, labeled “Huachi, Beni, Bolivia, Wm. M. Mann,” “September,” “Mulford Bio. Expl. 1921–1922.” U.S.N.M. type no. 72061.

Discussion.—Other than lancet characters as illustrated, this species may be separated by the orange upper half of the mesopleuron, orange front femora and coxae, orange mesoscutellum, and sessile anal cell of the hindwing. It is named for the collector, Dr. William M. Mann.

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**A NEW GENUS AND TWO NEW SPECIES OF LISTROPHORID
FUR MITES FROM NORTH AMERICAN SHREWS**

(ACARINA: LISTROPHORIDAE)¹

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ABSTRACT—A new genus and two new species are described, **Olistrophorus**, n.g. (type species *O. cryptotae*), **O. cryptotae** (type-host, *Cryptotis parva parva*), **O. blarina** (type-host, *Blarina brevicauda* are described as new. All of these are ectoparasites on members of the order Insectivora (shrews) from the United States.

The only record of a listrophorid fur mite recorded from the order Insectivora is the species *Asiochirus suncus* (Radford) collected from the musk shrew, *Suncus caeruleus giganteus* Geoffrey, in Colombo, Ceylon, May 20, 1944.

Material collected by the authors from two species of shrews, *Cryptotis parva parva* (Say), from Texas and *Blarina brevicauda kirtlandi* Bole and Moulthrop from Indiana extends the host range of listrophorid species parasitizing shrews to include the Nearctic realm of the Western Hemisphere.

The species collected from *S. caeruleus giganteus* has recently been placed in a new genus by Fain (1970). In the newly established genus

¹ Approved by the Director of the South Dakota Agricultural Experiment Station as Journal Series No. 1057.